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Allen A. Pusch

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SYSTEM

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Applicant submits herewith certified copies of Canadian Patent Application No. 2,419,746, filed February 25, 2003, and No. 2,424,152, filed April 1, 2003, in order to complete the claim for priority under 35 USC §119, on these Canadian applications. The claim to priority is set forth in the inventor-signed declaration executed on February 17, 2004, and filed in this application on February 23, 2004.

Respectfully submitted,

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Specification and Drawings, as originally filed, with Application for Patent Serial No:
2,419,746, on February 25, 2003, by ALLEN A. PUSCH, for "Outdoor Light Mounting
System".


Agent certificateur/Certifying Officer

August 25, 2005

Date

Canada

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ABSTRACT

A mounting system for an outdoor lighting unit including a pipe member located underground in an approximate vertical orientation and an electrical connection box mounted in an upper end of the pipe member and having an upper portion presenting an upper surface on which a standard of the lighting unit is supported. The relation between the upper portion of the connection box and the pipe member is such that in mounting the connection box in the pipe universal movement is achieved prior to fixing the connection box against movement in order that the upper surface is positioned to ensure the standard of the light is vertical regardless of the fact the pipe member deviates from an exact vertical orientation.

OUTDOOR LIGHT MOUNTING SYSTEM

Field of Invention

This invention relates to a system for use in installing outdoor lighting, and more particularly to an electrical box which provides for adjustment to achieve accurate vertical mounting of a standard of an outdoor light.

Background of Invention

Outdoor lights of the type including some form of light fixture affixed to the top of a post or other form of a standard extending up from a base portion, all of which are usually pre-wired, are in common use in residential yards, beside drives, walkways and the like as well as in various commercial areas for lighting purposes and to enhance the landscaping. A large portion of such outdoor lighting units are installed before or after the completion of landscaping in housing and other building development projects.

One procedure commonly followed is for a contractor, before final landscaping, to rough in the site by digging trenches for the wiring, to pour concrete bases in which the electrical connection boxes are cemented in, to run in the required wiring, and to mount the outdoor lights. With this approach damage may be done to the lighting unit or the mounting base may be displaced during subsequent landscaping, and an even more serious problem is that after final grading of the soil, the elevation of each of the already installed outdoor lighting units may not be correct.

Because of the above indicated problem, another common approach is to do the complete installation of outdoor lighting after the completion of the landscaping and the final grade is established. This involves additional work in that considerable extra excavation is required in digging the wiring trenches and base areas for locating the base of each lighting unit. Moreover, a significant

amount of the landscaping must be redone on completion of the installation of the lights.

Summary of the Invention

5 It is an object of the invention to provide a system which permits a more economical manner of installing outdoor lighting.

It is another object of the present invention to provide an electrical connection box which provides for adjustment of the vertical positioning of an outdoor light standard on installation.

10 According to one aspect of the invention, there is provided a mounting system for an outdoor light standard of the type including a post affixed to and extending upwardly from a bottom horizontal base portion, the system including an elongated pipe member for installing below ground surface in a position having a longitudinal axis disposed in an approximate vertical orientation. The pipe

15 member has at least one subsurface opening for receiving electrical wires and an open upper end defined by an inner surface of a mildly compressible, circumferential wall of the pipe member. There is further provided a box unit for electrical connections, the box having a lower portion for reception in the open upper end of the pipe member and an upper portion disposed above the upper end of the pipe

20 member. The lower portion of the box unit has an exterior circumferential surface for close engagement within the inner surface of the wall of the pipe member, and the upper portion of the box unit has an exposed upper surface providing a horizontal face for supporting the base portion of the light standard. Also included is universal connection means providing for adjustment of a vertical axis

25 of the upper portion of the box unit relative to the longitudinal axis of the pipe member. A locking means is used to hold the upper portion of the box unit relative to an adjusted position relative to the longitudinal axis of the pipe member. Thus, the vertical axis of the upper portion of the box unit can be locked after adjustment

in a fixed position relative to the longitudinal axis of the pipe member for holding the upper surface of the upper portion of the box unit in a horizontal plane regardless of the pipe member having been installed with the longitudinal axis thereof deviating from the vertical.

5 Another aspect of the invention resides in an electrical connection box for use in a mounting system for an outdoor light standard of the type including a post secured to and extending upwardly from a bottom flange, the mounting system including a rigid pipe member for installation within the ground, the pipe member having a longitudinal central axis and an open upper end defined by an inner
10 surface of a mildly compressible circular wall of the pipe member. In this type of system a clamp means is used to encircle and compress the circular wall of the upper end of the pipe member after installation of the connection box. The connection box of the invention is in the form of an integral unit formed of a lower hollow portion and an upper portion terminating in an upper flange defining a flat
15 surface in a plane normal to a central longitudinal vertical axis of the connection box for supporting and attachment to the bottom flange of the light standard. The lower portion of the connection box includes an outer wall providing an outer surface profile defined at least in part by a section of a sphere having a centre on the vertical axis of the connecting box and a radius substantially equal to that of
20 the inner surface of the circular wall of the pipe member. Thus, upon reception of the lower portion of the connection box in the open end of the pipe member, the lower portion can be oriented to a set position through a universal type movement of the lower portion of the box within the pipe member wherein the longitudinal axis of the box is at an angle relative to the longitudinal axis of the pipe member
25 thereby resulting in the flat surface of the upper flange being horizontally disposed. This being possible prior to tightening the clamp means. Thus, the clamping compresses the wall of the upper end of the pipe member about the outer surface of the lower portion of the box so as to resist movement of the connector

box from its set position relative to the pipe member.

An aspect of the invention also resides in a method of preparing a mounting system for supporting an outdoor light standard of the type having a base defining a horizontal bottom face, the method including the steps of affixing at least a lower
 5 end of an elongated pipe member within the ground base with an axis of the pipe member in a generally vertical orientation, the pipe member having at least one opening in a lower part thereof for receiving electrical wiring, and then inserting a lower portion of an electrical connection box into an open upper end of the pipe member in a close fitting arrangement, the box having an upper portion defining a
 10 flat surface normal to a central axis of the upper portion for supporting the bottom face of the light standard. According to this method, the upper portion of the box is adjusted relative to the pipe member to vertically position the central axis of the upper portion of the box, after which, the upper portion of the box is locked relative to the pipe member with the central axis of the upper portion being
 15 vertically positioned. Electrical wiring means fed through the lower opening in the pipe member and through a sealable opening in a bottom of the connection box is available for mounting the light standard on the flat surface of the upper portion of the box.

In the above method, preferably prior to final landscaping in an area to be
 20 provided with the outdoor lighting, the pipe member is initially installed approximately in a vertical position in the ground base with a length in excess so that a top portion of the pipe protrudes above an expected final grade, and subsequently, the upper end of the pipe member is trimmed at a level of final grade of landscaping prior to inserting the connection box into the open upper end of the
 25 pipe member.

Brief Description of Drawings

Figure 1 is an elevational view of the mounting system of the present

invention illustrating its relation to a landscaped area when installed;

Figure 2 is an enlarged vertical cross sectional view through the mounting system of Figure 1 but on an enlarged scale;

Figure 3 is an exploded view of the components of the present invention as
5 seen in the upper area of Figure 2;

Figure 4 is an enlarged cross sectional view of the upper portion of Figure 2 on an enlarged scale for sake of clarity of detail showing a different wired connection than in Figure 3;

Figure 5 is a perspective view of an alternative form of the connection box
10 structure; and

Figure 6 is a cross sectional view of the connection box at Figure 5 as seen from line 6--6 of Figure 5.

Detailed Description of the Invention

15 In Figure 1 there is shown mounted on the outdoor light system 10 of the invention, one of many outdoor light units 11 of a commercially available type. Such units 11, which are usually prewired, typically consist of a light fixture 12, mounted on a standard 13. The standard 13 includes a post or the like 14 extending upward from a base 15 shown as consisting of a plate 16 having holes
20 for reception of bolts 17 which are used to secure the unit 11 to an inground support at, or slightly above, surface 20 of a landscaped area in which the unit 11 is installed.

The system 10 includes a pipe member 21 which receives an electrical connection box 22 in its open upper end. The pipe member 21 may be formed from
25 commercially available PVC electrical conduit, such as a 4 inch PVC pipe as shown, or of a bell end PVC pipe which allows for the connection box 22 being of a greater diameter. In some circumstances, it may be preferable to utilize a pipe member 22 formed of other materials, including, for example, ABS type plastic, or

even certain available pipes formed of metal materials. The length of pipe cut to form the pipe member 21 preferably has a lower end 23 cut at an angle as shown at 26 to assist penetration into a lower layer 24 of unexcavated soil. Somewhat above the lower end 19 of the pipe member 21, there are provided a pair of opposed
5 openings 25 as shown, or in some situations, as will be discussed below, a single hole or even three separate holes may be desirable. For reasons which will also be discussed below, the pipe member 21 may be prepared at different lengths, but from Figure 1, it may be seen that in the final installation of the system, the pipe member 21 has an upper portion 27 extending to the approximate final grade shown
10 as the surface 20 of the landscaped area containing the outdoor lighting. Encircling the upper portion 27 of the pipe member 21 is a compression type clamp 28, which, as will be described further below, holds the connection box 22 within the pipe member.

As described below in relation to a preferred method of installing the system
15 of the invention, the connection box 22, which is cast or otherwise fabricated as an integral unit when provided for installation in the field, fits into the open upper end 27 of the pipe member 21 and is adjustable to a position wherein the light unit 11 can be readily mounted in an exact vertical orientation regardless of the fact the pipe 21 is mounted in only an approximate vertical orientation. Once the
20 connection box 22 has been so positioned, the compression clamp 28 is tightened to prevent further relative movement between the connection box 22 and the pipe member 21. The clamp 28 may be a commercially available product and may be of the type consisting of a metal band 30, the ends of which are drawn together by tightening a bolt, such as a T bolt 31 (Figure 3). When the pipe member 21 is
25 made of the most preferable material, i.e., a PCV plastic, and most other plastics commonly used in forming pipes of a size useable in the invention, the wall 32 of the pipe providing an inner surface 33, which is engaged by the connection box 22, is of a mildly compressible nature. It will be appreciated that if other pipe of a

more rigid nature, as identified above are used, it may be necessary to provide a number of short longitudinal slits or other form of cuts in the wall at the very upper end of the pipe member in order to provide such compressibility.

The connection box 22, may be formed from two or more components which
5 have been machined, cast or otherwise formed prior to fastening together to make the integral unit, but it would appear that the most economical method, particularly taking into account its designed configuration, is that of casting or otherwise molding the connector box 22 as an integral unit. Because of the loading and type of stresses the connection box experiences in use, it is believed that a more
10 preferable material for the unit is metal, such as cast iron, ductile iron, powdered metal or aluminum, but for use under certain conditions of the outdoor exposure, other various materials, such as molded Nylon may be satisfactory. The shape of the connection box is generally of cup shape, having a flanged open top 34, a generally cylindrical side wall 35 and a relatively flat bottom wall 36. In
15 describing the connection box, reference is made to an upper portion 37 which generally protrudes above the open upper end 27 of the pipe member 21 and a lower portion 38, which is generally contained, with some exception, within the inner surface 33 of the pipe member 21, as is most apparent in Figure 4.

In order to permit a limited amount of universal, i.e., a ball-in-socket effect,
20 of the lower portion 38 within the upper open end portion 27 of the pipe member 21, a portion of the outer circumferential surface of the lower portion 38 of the wall of the connection box 22 is in the form of a section of a sphere 40 having its radius extending out from a longitudinal centre line 41 of the connection box

A radius r of the sphere is substantially equal to the inner radius of pipe
25 member 21, i.e., the distance between a centre line 42 of the pipe member 21 and the inner surface 33 of the wall 32, so that the outer surface portion of the connection box 22 formed by the spherical shaped portion 40 is in close contact with the inner wall surface 33. As best seen in Figures 3 and 4 the spherical shaped

portion is defined on the radius r between a lower limit and an upper limit shown by lines 43,44, respectively, in Figure 3. Thus, as shown in cross-section in Figure 4, the arcuate configuration is provided by the sphere. At each end of the arcuate configuration, as shown in cross section, the continuation from lines 43 and 44
 5 represented lower land 45 and upper land 46. The lower land extends from line 43 to the lower end of the lower portion 38 of the connection box, while the upper land 46 follows a straight line upwardly. The straight lines may be at about 8° - 10° each inward from a tangent line at the opposite ends of the arcuate configuration provided by the spherical surface. Accordingly, as illustrated, as the connection
 10 box is shifted to its maximum adjustment angle, shown as angle α in Figure 4, in any direction, relative to the centre line, i.e., central longitudinal axis of the pipe member, the engagement of the lower land 45 engages the inner surface 33 of the pipe member 21 at a short distance from the extreme upper end of the pipe member 21, while upper land 46 engages the inner surface 33 immediately adjacent the
 15 open end of the pipe member 21.

At the upper end of land 46 forms the upper part of the lower portion 38 of the connection box 22 and terminates at a hexagonal or preferably octagonal flange portion 47 (Figure 3), the outer points of which project slightly beyond the outmost diameter of the lower portion 38 so as to form a stop for the maximum insertion of
 20 the connection box 22 at which position the upper portion of the connection box is immediately above the upper end of the pipe member. Continuous with the octagonal hexagonal flange 47 is a short cylindrical section 50 the depth of which may vary depending on the room required for accommodating the desired type of wiring to be used in the installation, such as box capacity which may be required to
 25 meet existing wiring requirement and regulations. Immediately above the cylindrical section 50 there is integrally formed with the body of the connection box 22 a square upper flange portion 51 which has in each of its four corners threaded openings 52 adapted to receive bolts 17 on the final mounting of the

outdoor light unit 11. In such mounting there is provided a compressible gasket member 53 having a peripheral shape matching the shape of the plate 16 forming the base 15 and/or the shape of the upper flange and further having bolt receiving openings aligned with the bolt openings of the base 15 of the tubular light unit and
5 the threaded openings 52 of the upper flange portion 51. A central opening 55 is also provided in the gasket 53 to allow passage of the electrical wiring from interior of the post 14 of the outdoor light unit 11 to the interior of the connection box 22.

The inner horizontal surface of the bottom 36 of the connection box 22 has an upwardly projecting grounding post 56 with a threaded bore 57 extending
10 downwardly therein for receiving a screw 58. The bottom 36 has at least one threaded opening 60 of a size to accommodate commercially available fittings, the opening preferably being 1-1/4 NPT. While a connection box having a single such opening would be sufficient for use when a single outdoor light unit is being installed an additional one or two openings are needed when a line must be run
15 from one unit to a second unit 11 or two other units 11, respectively. Accordingly, it may be satisfactory to produce a single style of connection box 22 provided with three openings, as illustrated in another embodiment of the invention. In such a design, openings not used in a particular installation may be sealed with commercially available plugs or the like for the 1-1/4 NPT opening.

20 While the embodiment illustrated in Figure 2 shows the use of a connection box utilizing two of the openings 60, for sake of clarity, reference is made to the enlarge sectional view of Figure 4 showing only one opening 60. As will be described further below the providing of underground wiring must meet certain set standards, which may differ in different geographical areas. Generally, however, it
25 is possible to use buried wiring such as that known as NMWV cable, if protected, or a more expensive wiring known as Teck cable which includes its own shielding. There are available for use with such cables special fittings to utilize in the standard opening shown at 60 in Figure 4. While it would be necessary in most cases to lay

these types of cable when initially installing the pipe member 21 in the method of installation in this invention, there are also commercial components available to permit the drawing of the wires at other times, such as for repair and on occasion during final installation after landscaping. One approach is to utilize a conduit system which involves running rigid piping through which the wire can be drawn during or subsequent to the original roughing in procedure of installing the conduits, the pipe member 21 and possibly the connection box 22. While there are commercially available fittings for connecting such conduits to the connection box, the use of such rigid piping is generally awkward. A more easily handled type of conduit is commercially available in the form of a corrugated PCV tubing which can be purchased, for example, under the name of COR-LINE, a brand name of IPEK Pipe. This conduit is relatively flexible and easy to install in the system of the present invention, and it is shown as 61 in Figures 3 and 4. For the use of this type of tubing there is shown a special insert arrangement or fittings means 58 consisting of an outer basically cylindrical member 62 having an upper portion 63 is shaped and threaded for reception in the opening 60. The cylindrical member 62 has a central opening therethrough with a lower portion 63 thereof being of a size to closely receive within the outer surface 64 of the corrugated tubing 61. The fitting means 58 further includes an upper PVC member 65 for then inserting from within the connection box 22, it also being a substantially cylindrical hollow member having a wall thickness for a slip fit between an inner surface 66 at the upper part of member 62 and the outer surface of the corrugated tubing 61, to accommodate solvent welding the parts of the fitting means 58 together.

In the embodiment shown in Figures 5 and 6, the general overall configuration of connection box 22a is the same as that of the embodiment illustrated particularly in Figures 2 to 4 but demonstrates an alternate outer shape that may suit other forms of higher production tooling and/or weight savings.

The upper portion 37a of the connection box 22a may be identical to that of

the previously described embodiment. In the lower portion 38a, the bottom 32 is also the same as that in the previously described connection box 22, and in Figure 5 there is readily shown the three equally spaced additional openings to which reference was previously made. However, while the effective profile of the portion 5 forming the spherical section 40a the adjacent lower and upper lands 45a and 46a, respectively, is the same, it may be seen that instead of a smoother outer surface, the lower portion 38a of the connection box 22a is different in that it consists of a plurality of spaced circumferential ribs 70. Because of the sameness of the profile of the section of the sphere presented by the outer edges of adjacent ribs 70, the 10 interaction between the outer surface of the lower section 38a and the inside of the upper end of a pipe member (not shown) into which the connection box inserted; is the same in its provision of universal movement between connection box and the pipe member. Also the existence of the adjacent lower and upper lands, 45a and 46a again presented by the outer edges of the ribs 10 has the same effect profile for 15 like areas in the previous embodiment, i.e., they limit the deviation of the central axis 41a of the connection box 22a to the central axis (not shown) of the containing pipe member is the same.

A purpose of forming the outer surface with the plurality of raised ribs instead of the structure shown for box 22 is that as indicated above and it may 20 provide better casting and molding features by providing a more even cooling procedure which may prevent cracking. Additionally, it may. Depending on the materials used in the pipe member 21, provide a more effective clamping may be achieved between the pipe member 21 and the connection box on tightening of the compression clamp 28.

25 The method of installing the system according to the invention overcomes the disadvantage indicated above in relation to known procedures. Prior to conducting in landscaping of the site in which the outdoor lighting units are to be installed, the lower layer 24 of soil which in the main has been unexcavated is

trenched to a depth indicated at 71 in Figure 1 and 2 so as to allow laying of the conduits, which may be of the corrugated tubing 61 from the source and to each of the areas to include a outdoor lightening unit 11. At each such area there is installed one of the pipe members 21 which may be driven into the ground in a generally vertical direction below the level of the trench bottom 71. The selection of the length of the pipe member 21 is such that the upper end thereof extends upwardly to a height in excess to the expected landscape surface 20. If necessary, concrete may be poured in a small patch around the lower end of the pipe member or as a column around the pipe so as to help secure its position. The corrugated tubing 61 in which the wiring shown as 72, 73 and 74 has been pulled through is then laid in the trenches and cut so that an end terminating at the pipe member 21 can be inserted through one of the holes 25 and pulled to the top of the pipe members. If an adjacent one or two light units are to be included in the same circuit, a beginning of an extra length or two of corrugated tubing is also fed through an opening 25 and pulled to the top of the same pipe member 21 and that tubing is then laid in trenches extending to the area for the next one or two light units. At this stage the laid tubing is partially covered, and even the connection box may be temporarily installed, but this functions may be deferred until final installation is being carried out.

In the method of the invention, final installation is preferably delayed until the landscaping is finalized at least to the establishing the final grade at surface 20 indicated in Figure 2 and 4. At this stage the excess in length of already installed pipe member 21 can be cut off at the landscaped surface 20. At this time the connection box 22 is readied for final installation by threading the cylindrical member 62 which is part of the fitting 50 into one of the threaded openings 60 in the bottom of the connection box. The already present corrugated tubing with the wires 72, 73 and 74, protruding from the end thereof, is pulled through into the central opening in the member 62 and the upper member 68 of the fitting 58 is

inserted from inside the box 22, and the fitting parts connected by the solvent welding. At this time the wires 72, 73 and 74 extend from the end of the corrugated tubing within the box 22 and a plug and/or sealant are applied to the insides of the fitting 58 so as to prevent any exterior leakage into the box

5 connection. The wires 72 and 73 forming the hot and neutral wires are connected to the wires 72b and 73b of the light unit and secured by twist on connector 70. Ground wire 74 is wrapped around screw 59 which is then tightened to provide a tail of ground wire 75 which is affixed to a provided ground wire 74b of the light unit via a twist connector not shown. The light unit 11 may then be secured to the
10 connection box 22 with the under surface of plate 16 being carried on upper mounting surface 49 of the flange portion 51 once gasket 53 has been located therebetween. The base 13 of the standard 73 is affixed to the upper flange portion 51 via bolts 17.

While the pipe member 21 was in fact only originally mounted in a general
15 vertical position, and in fact may have been somewhat displaced subsequent to its earlier installation, the final affixing of the connection box 22 within the upper end of the pipe member can be readily accomplished with the upper exposed member surface 49 of the upper flange portion precisely disposed in a horizontal plane. Before permanently tightening compression clamp 23, the angle between the centre
20 line 41 of the connection box 22 and the centre line 42 of the pipe member is adjusted to ensure that the standard 13 of the light unit 11 is vertical as finally installed. This may be done before actually connecting the light unit 11 to the connection box 22 by utilizing a level on the upper surface 49 of the box 22 to ensure it is in a horizontal plane. Alternatively, the clamp 23 may be left relatively
25 untightened until the light unit is attached, the post 14 is moved to its exact vertical orientation before the final tightening of the clamp 23.

Another advantageous feature of the manner in which the connection box is affixed to the pipe member 21 is that the amount of compression of the upper end

of the pipe 22 against the spherical profile of the outer surface of the connection box can be such as to hold the light unit in its set position under all normal conditions, while permitting the light unit 11 to be deflected from the set position when hit with a force which would otherwise damage the light unit.

5 While the wiring description given in relation to the mounting of a light unit as illustrated in Figure 4 has been given, it should be noted that in Figure 2, there is illustrated a difference in the wire connections within the connection box 22. In the arrangement shown here there are connected to wires 72 and 73, as well as wires 72b and 73b of the light unit 11, wires 72a and 73a which pass through a
10 corrugated pipe 61 connected to the box through a second opening in the connection box. As previously mentioned, these wires extend to a subsequent light unit in a series. Yet a third light unit might be separately fed through a third set of wires which would pass out through the third opening 60 in the bottom of the connection box 22.

15 As indicated, an important feature of the invention is the manner in which the connection box is adjustable for enabling the correct vertical installation of the light unit. This is accomplished in the illustrated embodiment by the adjustment of the angle of the complete connection box relative to the pipe member to establish the upper standard supporting surface 49 of the connection box in a horizontal
20 plane. It will be obvious to those skilled in the art that the establishing of the supporting surface in the desired plane can also be accomplished by providing a universal connection within the box construction per se so as to accomplish a lockable universal movement as that described above between the upper and lower portions of the box connection. Such an arrangement might be more practical in a
25 smaller type box which would be used, for example, in certain installations which use a lower voltage, such as 12 volts.

It will be appreciated that while various embodiments have been described, variations within the spirit of the invention as defined in the appending claims will

be obvious to those skilled in the art.

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CLAIMS

1. A mounting system for an outdoor light standard of the type including a post affixed to and extending upwardly from a bottom horizontal base portion, said system comprising:

an elongated pipe member for installing below ground surface in a position having a longitudinal axis disposed in an approximate vertical orientation;

said pipe member having at least one subsurface opening for receiving electrical wires and an open upper end being defined by an inner surface of a mildly compressible, circumferential wall of said pipe member;

a box unit for electrical connection having a lower portion for reception in said open upper end of said pipe member and an upper portion disposed above the upper end of said pipe member,

said lower portion of said box unit having an exterior circumferential surface for close engagement within said inner surface of said wall of said pipe member,

said upper portion of said box unit having an exposed upper surface providing a horizontal face for supporting said base portion of said light standard, and, universal connection means providing for adjustment of a vertical axis of said upper portion of said box unit relative to said longitudinal axis of said pipe member; and

locking means for holding said upper portion of said box unit relative to an adjusted position relative to said longitudinal axis of said pipe member,

whereby said vertical axis of said upper portion of said box unit is locked after adjustment in a fixed position relative to said longitudinal axis of said pipe member for holding said upper surface of said upper portion of said box unit in a horizontal plane regardless of said pipe member having been installed with the longitudinal axis thereof with a deviation from the vertical.

2. In a method of preparing a mounting system for supporting an outdoor light standard of the type having a base defining a horizontal bottom face, the steps of:

affixing at least a lower end of an elongated pipe member within the ground base with a axis of said pipe member in a generally vertical orientation, said pipe member having at least one opening in a lower part thereof for receiving electrical wiring;

inserting a lower portion of an electrical connection box into an open upper end of said pipe member in a close fitting arrangement, said box having an upper portion defining a flat surface normal to a central axis of said upper portion for supporting said bottom face of said light standard,

adjusting the upper portion of said box relative to said pipe member to vertically position said central axis of said upper portion,

locking said upper portion of said box relative to said pipe member with said central axis of said upper portion vertically positioned,

feeding electrical wires through said lower opening in said pipe member and through a scalable opening in a bottom of said connection box in preparation for mounting said light standard on said flat surface of said upper portion of said connection box.

3. The method defined in claim 2, wherein:

said pipe member is initially installed approximately in a vertical position in said ground base prior to completing final landscaping of an area to be provided with said outdoor lighting, and

further comprising the step of:

trimming said upper end of said pipe member at a level of final grade of landscaping prior to inserting said connection box into said open upper end of said pipe member.

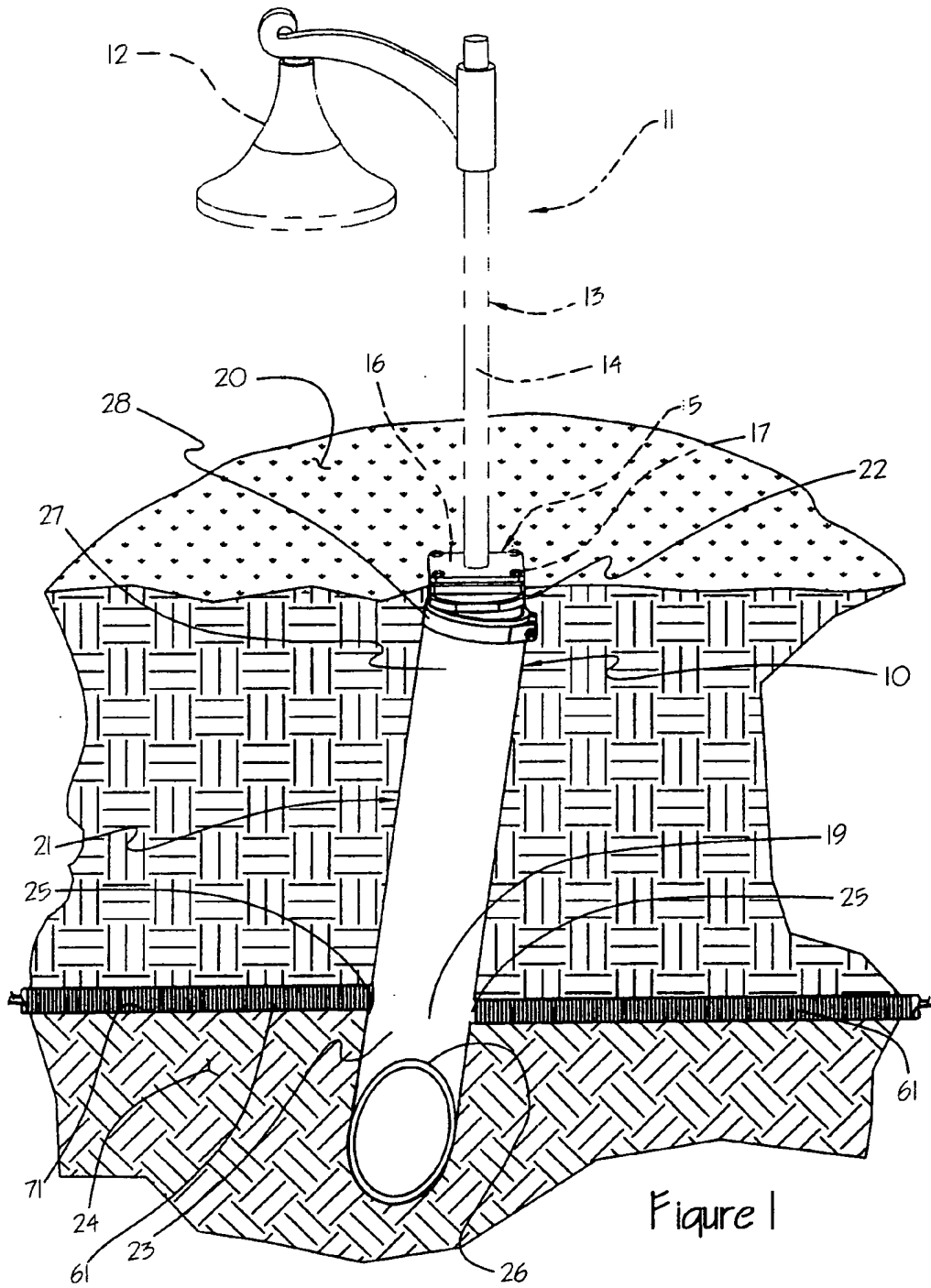
4. An electrical connection box for use in a mounting system for an outdoor light standard of the type including a post secured to and extending upwardly from a bottom flange, said mounting system including a rigid pipe member for installation within the ground, said pipe member having a longitudinal central axis and an open upper end defined by an inner surface of a mildly compressible circular wall of said pipe member, and clamp means for encircling and compressing said circular wall,

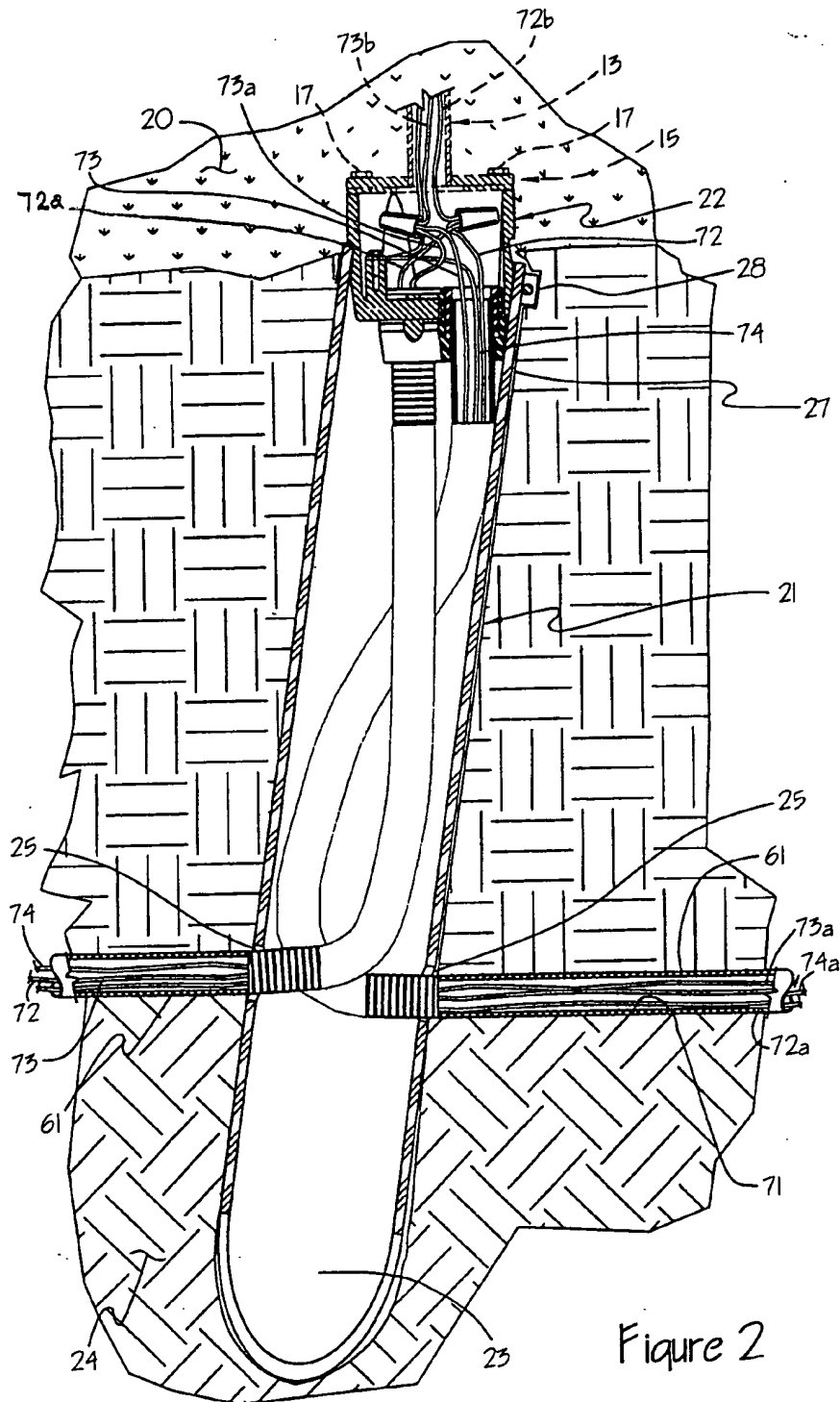
said connection box comprising:

an integral unit formed of a lower hollow portion and an upper portion terminating in an upper flange defining a flat surface in a plane normal to a central longitudinal vertical axis of said connection box for supporting and attachment to said bottom flange of said light standard.

said lower portion of said connection box including an outer wall providing an outer surface profile defined at least in part by a section of a sphere having a centre on said vertical axis of said connection box and a radius substantially equal to that of said inner surface of said circular wall of said pipe member,

whereby upon reception of said lower portion of said connection box in said open end of said pipe member, said lower portion can be oriented to a set position with said longitudinal axis of said box at an angle relative to said longitudinal axis of said pipe member resulting in said flat surface of said upper flange being horizontally disposed prior to tightening said clamp means so as to compress said wall of said upper end of said pipe member about said outer surface of said lower portion of said box thereby resisting movement of said connection box from said set position.





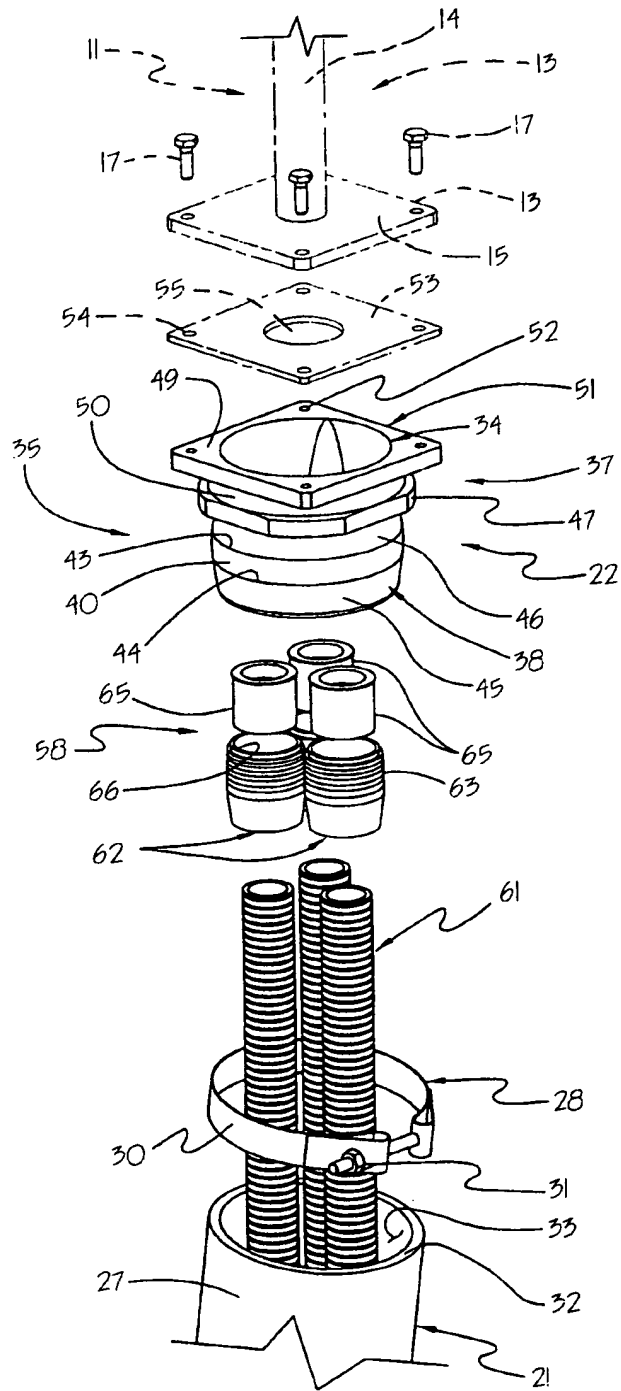


Figure 3

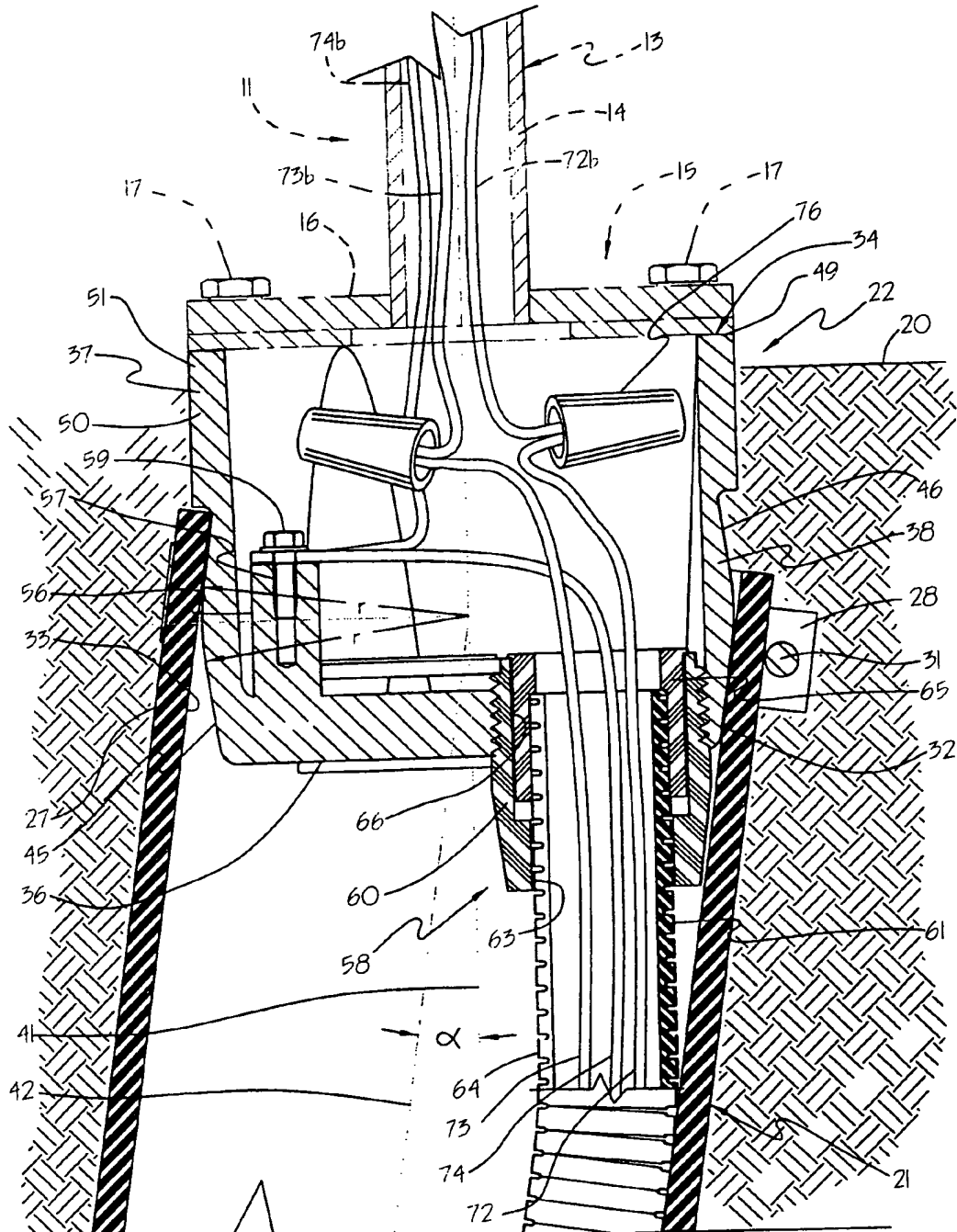


Figure 4

